

State of New York

-against-

Michael Adamowicz III, et al.

Defendants

This is a cost-recovery action brought under § 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”). Plaintiff, the State of New York, seeks to recover costs incurred as a result of the investigation and cleanup of the National Heatset Printing Site (the “Site”), a hazardous waste site located in Suffolk County, New York, and the Site’s downgradient from Michael Adamowicz III,¹ individually and as a trustee under a deed of trust for the benefit of Michael Adamowicz IV, Elizabeth M. Fraser, individually and as trustee under a deed of trust for the benefit of Bonnie Anne Fraser and as trustee under a deed of trust for the benefit of Mary Margaret Fraser, and as successor trustee under a deed of trust for Mary Adamowicz, One Adams Blvd. Realty Corp., National Heatset Printing Corp., and National Heatset, Inc.

This matter was tried before the Court as a bench trial on December 2-5 and December 9-12, 2013. At the close of trial, the Court advised the attorneys for the parties that it would issue a

By way of example, Sosik admitted that one of his demonstrative aids, which he stated he had checked for accuracy did not accurately present the data as illustrated. [Sosik, Trial Tr. 1310:16-1320:1, Dec. 11, 2013, Rec.

ruling as soon as practically possible after receipt of the attorneys' post-trial filings. [Trial Tr. 1471:22-1472:14, Dec. 12, 2013, Rec. Doc. 339; Rec. Doc. 330].

III. Duty of the Trial Judge in a Proceeding Tried to the Court

In any bench trial, the trial judge has to evaluate the credibility of the testifying witnesses, the witnesses' demeanor, any previous inconsistent statements by a witness, as well as the explanation for any such inconsistent statements. The United States Supreme Court has stated that "trial judges have the unique opportunity to consider the evidence in the living courtroom context, while appellate judges see only the cold paper record." *Gasperini v. Ctr. for Humanities, Inc.*, 518 U.S. 415, 438 (1996) (internal quotation marks omitted). The United States Court of Appeals for the Second Circuit has stated that "the full flavor of a hearing cannot be sensed from the sterile sheets of a transcript." *ABC, Inc. v. Stewart*, 360 F.3d 90, 100 (2d Cir. 2004) (internal quotation marks omitted). The record will reflect that the Court questioned each witness that testified extensively and that all non-party witnesses, with the exception of expert witnesses, were sequestered during the course of trial. The Court's findings of fact that follow are in no small part based on the trial judge's view of the credibility of the witnesses, based on their trial testimony and demeanor at trial, as well as the documentary evidence and the explanation of, or reconciliation of, any inconsistent statements made by a witness during his or her trial testimony or previous inconsistent statements, written or oral, made by a witness.

The Court also notes that due to the layout of the courtroom in which the trial was conducted the trial judge was seated between approximately three and nine feet from each witness as the witness testified.

IV. Order of Witnesses' Testimony and the Court's View of Witnesses' Credibility

The first witness to testify was Robert Seyfarth (“Seyfarth”), a former employee of the Suffolk County Department of Health Services (“SCDHS”). The Court found Seyfarth to be knowledgeable and credible and his testimony to be generally consistent. The second witness to testify was Jeffrey Dyber (“Dyber”), an environmental engineer at the New York State Department of Environmental Conservation (“DEC”) who oversaw the investigation and remediation of the Site. The Court found Dyber to be knowledgeable and meticulous and his testimony to be consistent. The third plaintiff’s witness to testify was Dr. Charles McLane (“McLane”), who was tendered as and accepted by the court as an expert in the field of groundwater flow system analysis and fate and transport of chemical contaminants in subsurface water and soil. The Court found McLane to be professional in answering all questions asked of him whether by plaintiff’s counsel, defendants’ counsel, or the Court. The Court also found McLane to be knowledgeable and candid, and his testimony to be credible. The fourth witness to testify was Charles Sosik (“Sosik”), defendants’ expert who was tendered as and accepted by the Court as an expert in the field of hydrogeology, the investigation and remediation of hazardous substances and the fate and transport analysis of contaminants in the soil in groundwater. The Court found Sosik to be less than well prepared² and less than fully credible and candid.³ The Court also found his testimony to be evasive and overly and unnecessarily conditional. The fifth witness to testify was defendant Michael Adamowicz III (“Adamowicz”), individually and on behalf of One Adams Blvd. Realty Corp. (“OABRCorp”), as its President. The Court found Adamowicz’s testimony to be generally credible, although not particularly relevant to issues

² By way of example, Sosik admitted that one of his demonstrative aids, which he stated he had checked for accuracy did not accurately present the data as illustrated. [Sosik, Trial Tr. 1310:16-1320:1, Dec. 11, 2013, Rec. Doc. 338; *compare with* Defs.’ Ex. 21 at S23573 and Pl.’s Ex. 39 at S023719 to Defs.’ Demonstratives 129 and 132].

³ With regard to his candor, Sosik stated that dense-non-aqueous-phase liquids (“DNAPLs”) were detected at the Site in his 2005 expert report while during trial he denied that DNAPL was present at the Site. [Sosik, Trial Tr. 1368:5-1369:14, Dec. 11, 2013, Rec. Doc. 338].

before the Court. Michael Pavone (“Pavone”), a former foreman and operator of the printing presses at National Heatset Printing (“NHP”), Rudolph Marconi (“Marconi”), a former officer and employee of NHP, Chittababu Vasudevan (“Vasudevan”), a former Director of the DEC Remediation Bureau, and John Helmeset (“Helmeset”), a retired environmental engineer at DEC, testified by deposition in lieu of live testimony. Thus, all the Court had before it were the deposition transcripts and was in effect, as it relates to the testimonies of Pavone, Marconi, Vasudevan, and Helmeset, in the same position as an appellate court reviewing a transcript.

V. Findings of Fact

In any trial, civil or criminal, there are two types of evidence the trier of fact may consider: direct evidence, such as testimony of an eye witness, and indirect or circumstantial evidence, the proof of circumstances that tends to prove or disprove the existence or nonexistence of certain other facts. The law makes no distinction between direct and circumstantial evidence. The Court makes the following findings of fact and conclusions of law pursuant to Federal Rule of Civil Procedure 52(a). In some instances, a finding of fact may also be a mixed conclusion of law and in other instances a conclusion of law may include findings of fact.

a. Procedural History of the Case

1. Plaintiff filed this action to recover costs pursuant to CERCLA § 107(a) on June 14, 2002, against Michael Adamowicz III, individually and as trustee under a deed of trust for Michael Adamowicz IV; Elizabeth M. Fraser; Mary Adamowicz, as trustee under a deed of trust for Bonnie Ann Fraser and Mary Margaret Fraser; OABRCorp; National

Heatset Printing Corp. (“NHPC”); National Heatset Inc. (“NHI”); and Rudolph Marconi.⁴
[Rec. Doc. 1].

2. The case was originally assigned to United States District Judge Denis R. Hurley and reassigned to United States District Judge Sandra L. Townes on September 7, 2004. [ECF Entry dated Sept. 7, 2004]. It was reassigned to the trial judge on October 11, 2012. [ECF Entry dated Oct. 11, 2012].
3. On July 16, 2004, defendant Mary Adamowicz was removed as a party as a result of her death. Elizabeth Fraser was substituted as her successor trustee (referred to hereinafter in her individual and trustee capacities as “Fraser”). [Rec. Doc. 43].
4. On January 31, 2006, Judge Townes entered a default judgment against NHI and NHPC (collectively, the “NHP defendants”) ruling that they are jointly and severally liable under CERCLA §§ 107(a)(2) and 113(g)(2), and 42 U.S.C. §§ 9607(a)(2) and 9613(g)(2) for all past and future response costs incurred or to be incurred by plaintiff at the Site. [Rec. Doc. 141 at 2].
5. On March 30, 2011, Judge Townes granted summary judgment in favor of plaintiff on the issue of liability against Adamowicz and Fraser, in their individual capacities and as trustees, and OABRCorp (collectively, the “OAB defendants”), after determining that plaintiff had established the following elements of its CERCLA claim: (1) OAB defendants are responsible persons [Rec. Doc. 222 at 24-28, 42]; (2) the Site, including the leaching pool, overflow pool, pipe, slab area beneath the building, and the drum storage area, is a facility [*Id.* at 14-15]; (3) there has been a release or threatened release of hazardous substances at the Site [*Id.* at 16-17]; and (4) plaintiff incurred costs

⁴ Plaintiff also originally brought state law claims of public nuisance and restitution against the parties, but, on September 25, 2012, filed a Notice of Voluntary Dismissal of these claims. [Rec. Doc. 260].

responding to that release (5) that were not inconsistent with the National Contingency Plan (“NCP”).⁵ [*Id.* at 17-21].

6. Judge Townes also ruled that the OAB defendants are not entitled to apportionment of liability and, thus, are jointly and severally liable to plaintiff with the NHP defendants, for plaintiff’s past and future response costs at the Site. [*Id.* at 32-34].
7. On January 30, 2012, Judge Townes approved a Consent Decree which resolved all claims brought by plaintiff against Marconi, the operator of the Site, for the sum of \$10,000. [Rec. Doc. 248].
8. Pursuant to Judge Townes’ March 30, 2011, ruling, the only matters left for trial were “whether – or to what extent – [the OAB and NHP] Defendants should bear the costs associated with hazardous material detected *downgradient from the Site*” and the total costs for which OAB and NHP defendants are liable under CERCLA. [Rec. Doc. 222 at 37, 43 (emphasis added); *see also* Rec. Doc. 272 at 13].

b. Background⁶

9. The Site is located at One Adams Boulevard in the Hamlet of Farmingdale, Town of Babylon, Suffolk County, New York. [Rec. Doc. 318 ¶ 1].
10. The Site is 4.5 acres in area and contains one industrial building. [Rec. Doc. 318 ¶ 2].
11. Prior to the construction of the industrial building at the Site in or around 1972, no industrial activity was conducted at the Site. [Adamowicz, Trial Tr. 1395:5-12, Dec. 11, 2013, Rec. Doc. 338].

⁵ The NCP has been described as “the federal government’s roadmap for responding to the release of hazardous substances.” *See Niagara Mohawk Power Corp. v. Chevron U.S.A., Inc.*, 596 F.3d 112, 121 (2d Cir. 2010).

⁶ On November 26, 2013, the parties filed a Joint Stipulation of Facts and Authenticity of Exhibits. [Rec. Doc. 318]. While the Court has considered the parties’ stipulation in summarizing the facts, it has not relied on its contents in support of facts which are not otherwise supported by the record.

12. A leaching pool is located on the north-northeast side of the industrial building, between the building and the Long Island Rail Road tracks. [Seyfarth, Trial Tr. 103:17-104:11, Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 67 at KR003114-15]. A pipe leads from the building to near this leaching pool, which is also connected to an adjoining overflow pool by a pipe. [Pl.’s Ex. 21; Rec. Doc. 318 ¶ 15].
13. The ground beneath the Site consists of sand, gravel, silt, and clay that overlay bedrock. These sediments are divided into three aquifers:⁷ the Upper Glacial Aquifer, the Magothy Aquifer, and the Lloyd Aquifer. The Upper Glacial Aquifer extends from ground surface to approximately 70 feet to 85 feet below ground surface (“bgs”). A layer of clay, referred to as Gardiner’s Clay, is at the bottom of the Upper Glacial Aquifer. The Magothy Aquifer extends from the bottom of the Gardiner’s clay to the top of another layer of clay, referred to as Raritan Clay. The Magothy Aquifer is a part of the Long Island Aquifer, which is designated a sole source aquifer⁸ by the United States Environmental Protection Agency. Below the Magothy Aquifer is the Lloyd Aquifer. [Dyber, Trial. Tr., 388:1-12, Dec. 3, 2013, Rec. Doc. 344; McLane, Trial Tr. 780:19-783:16, Dec. 5, 2013, Rec. Doc. 343].
14. The Site’s downgradient, that is the direction that groundwater flows, is in a south-southeast direction. [Dyber, Trial Tr., 406:13-18, 414:3-19, Dec. 3, 2013, Rec. Doc. 344; McLane, Trial Tr. 783:21-25, Dec. 5, 2013, Rec. Doc. 343; McLane, Trial Tr. 962:18-965:18, Dec. 9, 2013, Rec. Doc. 336].

⁷ An aquifer is a layer of rock or sand that can absorb and hold water. MERRIAM-WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/aquifer> (last visited April 10, 2014).

⁸ The United States Environmental Protection Agency (“EPA”) defines a sole source aquifer as an aquifer “which supplies at least fifty percent (50%) of the drinking water consumed in the area overlying the aquifer.” United States Environmental Protection Agency, Sole Source Aquifers, <http://www.epa.gov/region2/water/aquifer/> (last visited April 10, 2014).

15. The Suffolk County Water Authority (“SCWA”) Albany Avenue Well Field (“AAWF”) is a public supply of wells approximately 6,500 feet downgradient from the Site. [Dyber, Trial Tr., 432:10-13, Dec. 3, 2013, Rec. Doc. 344; Dyber, Trial Tr. 451:1-17, Dec. 4, 2013, Rec. Doc. 345].
16. The AAWF draws water from 419 to 509 feet bgs, a depth located in the Magothy Aquifer. [Pl.’s Ex. 76 at KR002645].
17. There are several private drinking wells farther south and southeast of the AAWF, including: 411 Atlantic Street, located approximately 2,000 feet southeast from the AAWF; 7 Howard Street, located approximately 2,500 feet south-southeast or southeast of the AAWF; and 12 Edmunds Place, located approximately 3,000 feet south of the AAWF. [Dyber, Trial Tr. 438:9-440:25, Dec. 3, 2013, Rec. Doc. 346; Dyber, Trial Tr. 569:25-572:5, Dec. 4, 2013, Rec. Doc. 344; Dyber, Trial Tr. 670:17-674:16, Dec. 5, 2013, Rec. Doc. 345; Pl.’s Ex. 40 at 021682].
18. Perchloroethylene (“PCE”), also known as “perc” and “tetrachloroethylene,” is the principal contaminant of concern at the Site. [Dyber, Trial Tr. 385:22-386:2, Dec. 3, 2013, Rec. Doc. 344; Pl.’s Ex. 15 at S013682]. Dichloroethylene (“DCE”) and trichloroethylene (“TCE”) are degradation products of PCE. [McLane, Trial Tr. 779:16-23, Dec. 5, 2013, Rec. Doc. 343; Court Ex. 1]. PCE, DCE, and TCE are volatile organic compounds (“VOCs”). [Pl.’s Ex. 51 at S040000].
19. The groundwater standard for PCE, as set by the DEC, is less than or equal to five parts per billion (“ppb”). [Dyber, Trial Tr. 401:19-402:9, Dec. 3, 2013, Rec. Doc. 344].
20. The recommended soil cleanup objective of PCE in the 1990s, as set by the DEC, was 1.4 parts per million. [Dyber, Trial Tr. 398:6-399:1, Dec. 3, 2013, Rec. Doc. 344].

c. Owners of the Site

21. In 1972, Michael Adams Co., Inc. acquired title to the Site. [Rec. Doc. 318 ¶ 3].
22. On November 3, 1972, Michael Adams Co., Inc. transferred title of the Site to Adamowicz, Fraser, and Mary Adamowicz. [Rec. Doc. 318 ¶ 4].
23. On or about August 8, 1990, Adamowicz, Fraser, and Mary Adamowicz conveyed title of the Site to One Adams Blvd. Realty Co., a partnership in which defendants Adamowicz and Fraser were partners. [Rec. Doc. 318 ¶ 7].
24. In 1996, One Adams Blvd. Realty Co. conveyed title of the Site to defendant OABRCorp, its current owner. [Rec. Doc. 318 ¶ 9].
25. Defendants Adamowicz and Fraser are the sole shareholders, officers, and directors of OABRCorp. [Rec. Doc. 318 ¶ 10].

d. Lithographic Printing Operations at the Site Between 1983 and 1988

26. NHPC was incorporated under the laws of Delaware on or about March 17, 1983, and subsequently authorized to do business in New York on or about July 14, 1983. [Rec. Doc. 318 ¶ 11].
27. NHI was incorporated under the laws of the State of New York on or about May 12, 1983, for the purpose, among others, of performing lithography. [Seyfarth, Trial Tr. 99:19-22, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 8 at S15068-S15069].
28. On or about July 1, 1983, NHPC entered into a lease agreement with defendants Adamowicz and Fraser, on behalf of One Adams Blvd. Realty Co., for approximately 34,000 square feet of office, printing, and warehouse space at the Site for a term ending June 30, 1988. [Adamowicz, Trial Tr. 1400:7-17, 1402:6-22, Dec. 11, 2013, Rec. Doc. 338; Pl.'s Ex. 9 at 0004236; Rec. Doc. 318 ¶ 6].

29. At the time they entered into the lease with NHPC, defendants Adamowicz and Fraser had ownership interests in the Site. [Adamowicz, Trial Tr. 1395:13-1396:10, Dec. 11, 2013, Rec. Doc. 338].
30. At the Site, NHP engaged in lithographic multi-color printing of newspaper inserts and circulars for commercial clients, such as Kmart. [Marconi Dep. 7:8-16, Aug. 3, 2004, Rec. Doc. 320; Pavone Dep. 6:22-8:8, Nov. 4, 2004, Rec. Doc. 319].
31. The printing presses at the Site were operated twenty-four hours a day. [Pavone Dep. 16:8-11, Nov. 4, 2004, Rec. Doc. 319].
32. Diluted fountain solution was used to clean the printing presses and the waste created was stored in drums. [Pavone Dep. 22:17-22, 24:11-27:22, 63:5-17, Nov. 4, 2004, Rec. Doc. 319].
33. On at least two occasions, diluted fountain solution overflowed during the cleaning process, mixed with ink, dirt, and oil on the floor and was swept out the back door, near the railroad tracks. [Pavone Dep. 22:17-22, 24:11-27:22, 63:5-17, Nov. 4, 2004, Rec. Doc. 319].
34. Pavone, an NHP foreman and press operator, was not aware of any industrial waste being contracted out for removal; and Seyfarth, from the SCDHS, did not recall NHP hiring a licensed industrial waste removal service. Pavone noted that waste was stored in drums in the press room, against the wall dividing the press room and the paper storage room. [Pavone Dep. 42:9-20, 56:15-57:19, Nov. 4, 2004, Rec. Doc. 319; Seyfarth, Trial Tr. 271:3-17, Dec. 3, 2013, Rec. Doc. 344; Rec. Doc. 318 ¶ 14].
35. NHP abandoned the Site in April 1988. [Pl.'s Ex. 65 at KR007431].

e. SCDHS Inspections of the Site Between 1983 and 1988 and the Miller Avenue Study

36. On October 6, 1983, SCDHS inspected the Site and directed NHP to hold photo and plate-making waste and to hire a New York State licensed industrial waste scavenger to remove the waste pursuant to Article 12 of the Suffolk County Sanitary Code. [Seyfarth, Trial Tr. 117:25-118:12, 118:16-119:1, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 18; Pl.'s Ex. 28].
37. A letter dated October 12, 1983 and sent to NHP memorialized the October 6, 1983 SCDHS visit and advised NHP to either (1) cease all industrial discharge or (2) connect the discharge to the Southwest Sewer District. [Seyfarth, Trial Tr. 119:10-120:7, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 18].
38. On April 2, 1985, SCDHS inspected the Site and found five drums and three one-gallon buckets of ink stored outside without a berm to contain spills. [Seyfarth, Trial Tr. 121:18-122:4, 123:7-10, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 23].
39. On April 2, 1985, an SCDHS inspector reiterated that NHP "must use a NYS registered scavenger" and also advised NHP to "retain scavenger receipts." [Pl.'s Ex. 23; *see also* Seyfarth, Trial Tr. 123:15-25, Dec. 2, 2013, Rec. Doc. 346].
40. A letter dated April 10, 1985 notified NHPC that their indoor and outdoor drums must be registered within fourteen days under Article 12 of the Suffolk County Sanitary Code. [Seyfarth, Trial Tr. 124:20-125:8, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 24].
41. On March 28, 1986, an SCDHS inspection observed 38 unregistered drums that contained waste solutions, inks, dress washes, and oils being stored indoors and 12 drums that contained unknown substances mixed with debris being stored outdoors. [Seyfarth, Trial Tr. 129:8-14, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 13].

42. The March 28, 1986 SCDHS inspection report also noted that there was “strong evidence of dumping from staining of inks and oils on ground” and no receipts for toxic waste disposal. [Pl.’s Ex. 13 at S020824; *see also* Seyfarth, Trial Tr. 129:15-20, Dec. 2, 2013, Rec. Doc. 346].
43. On April 2, 1986, an SCDHS inspection noted an area “stained black with run off lines from under the door down grade to the embankment created by the L.I.R.R. tracks.” [Pl.’s Ex. 27 at S020480; *see also* Seyfarth, Trial Tr. 135:2-18, Dec. 2, 2013, Rec. Doc. 346].
44. The Site was connected to the Southwest Sewer District in or around December 1987. [Seyfarth, Trial Tr. 139:5-140:14, Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 17].
45. On February 2, 1988, a sample taken from the Site’s leaching pool contained 24,000 ppb of DCE and 88 ppb of TCE. [Seyfarth, Trial Tr. 159:5-21, Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 30].
46. In a February 11, 1988, letter from SCDHS, NHPC was directed to have the “[leaching] pool immediately pumped of all liquids and sludge by an industrial waste scavenger.” [Pl.’s Ex. 32].
47. On May 4, 1988, an SCDHS inspector noted that there was no evidence that the leaching pool had been cleaned. [Seyfarth, Trial Tr. 167:2-4, 167:25-168:7, Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 33 at S020513]. On May 24, 1988, the liquid was pumped out of the pool and sludge was all that remained; however, on November 2, 1988, an SCDHS inspector noted that rainfall had filled the pool with liquid again. [Seyfarth, Trial Tr. 170:15-25, Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 33 at S020514].
48. On November 15, 1988, after approximately 1,125 gallons of liquid and seven yards of sludge and soil were removed, SCDHS obtained a sample from the bottom of the

leaching pool. This sample contained 13,000,000 ppb of PCE and 79,000 ppb of TCE.

[Seyfarth, Trial Tr. 172:14-173:21, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 36 at 0006774].

49. On January 10, 1990, SCDHS obtained a sample of sludge from the pipe leading to the leaching pool. This sample contained 31,000 ppb of PCE, 5,500 ppb of TCE, and 10,000 ppb of DCE. [Seyfarth, Trial Tr. 227:13-25, Dec. 2, 2013, Rec. Doc. 346; Pl.'s Ex. 21 at S020526].
50. SCDHS testing of groundwater upgradient of the Site showed that chlorinates, such as PCE, were present at much lower levels, as compared to the soil and groundwater at the Site. Of four upgradient sampling points, the highest PCE concentration was 2 ppb, which is within permissible DEC standards for PCE concentrations in groundwater and soil. [McLane, Trial Tr. 861:10-17, 914:20-915:10, 920:18-921:9, Dec. 9, 2013, Rec. Doc. 336; Pl.'s Ex. 83].
51. The SCDHS investigation revealed that “different discharges occurred over time and that the spill discovered in 1988 probably was not the first time material had been disposed of.” [Pl.'s Ex. 75 at S040080; *see also* Seyfarth, Trial Tr. 230:23-231:18, Dec. 2, 2013, Rec. Doc. 346].

f. Donnelly's Investigation of the Site

52. OAB defendants retained Donnelly Engineering, an environmental consulting group, to address the hazardous wastes found at the Site in 1988. [Adamowicz, Trial Tr. 1407:9-1408:2, 1414:24-1415:6, Dec. 11, 2013, Rec. Doc. 338].

53. On November 7, 1988, Donnelly Engineering sampled “liquid waste, ink” from the Site and found that it contained 620 µg/kg, or ppb, PCE.⁹ [Seyfarth, Trial Tr. 185:10-16, 187:20-189:11, Dec. 2, 2013, Rec. Doc. 346; Defs.’ Ex. 78 at 0000942¹⁰].
54. On December 19, 1988, Donnelly Engineering took a “waste ink sample” from the Site and found that it contained 550 µg/kg PCE.¹¹ [Seyfarth, Trial Tr. 192:6-9, 194:6-16, Dec. 2, 2013, Rec. Doc. 346; Defs.’ Ex. 78 at 0000944].
55. In May 1989, Donnelly Engineering found concentrations of 14 million ppb of PCE in the soil near the leaching pool; this concentration is 10,000 times the recommended soil cleanup objective. [Dyber, Trial Tr. 400:12-401:14, Dec. 3, 2013, Rec. Doc. 344; Pl.’s Ex. 67 at KR003116, KR003119].
56. In June 1989, Donnelly Engineering found concentrations of 2,700 ppb of PCE in the groundwater on the Site; this concentration is 540 times the groundwater standard. [Dyber, Trial Tr. 402:10-403:9, Dec. 3, 2013, Rec. Doc. 344; Pl.’s Ex. 67 at KR003118-KR003120].
57. The August 1989 “Site Contamination Investigation Level II Report,” based on the laboratory analyses of various samples taken from installed soil borings (SB-1 and SB-2) and monitoring wells (MW1, MW2A, MW3A, and MW4A), showed that “contamination of subsurface soils and groundwater has occurred from past discharge of materials into the industrial leaching pool.” [Pl.’s Ex. 67 at KR003120; *see also* Seyfarth, Trial Tr. 203:20-204:24, Dec. 2, 2013, Rec. Doc. 346]. MW1 was “installed [upgradient] on the

⁹ Soil concentrations of PCE are sometimes reported in µg/kg, which is equal to ppb. Nevada Division of Environmental Protection, A Word About Units of Measure, <https://ndep.nv.gov/pce/measure.html> (last visited on April 10, 2014).

¹⁰ The Court finds the 625 ug/kg number set out in the transcript of Seyfarth’s trial testimony to be in error and adopts the value noted in the lab results: 620 ug/kg. [Defs.’ Ex. 78 at 0000942].

¹¹ The Court notes that the transcript reflects that the substance was “tetrachloroethane,” (which is not-PCE) rather than “tetrachloroethene” (which is PCE), as set out in Defs.’ Ex. 79 at 0000944. The Court believes that what was actually testified to at trial was tetrachloroethene and what is reflected in the transcript is a transcription error.

northern property boundary . . . for the purpose of determining background contamination of native soil and groundwater entering this [S]ite,” while monitoring wells “MW2A, MW3SA, and MW4A were placed down-gradient, with respect to groundwater flow.” [Pl.’s Ex. 67 at KR03116; *see also* Pl.’s Ex. 67 at KR003115 (showing the locations of the leaching pool, railroad, monitoring wells, and soil borings)].

58. Laboratory analyses showed extensive organic contamination of soils below and around the north-northeast leaching pool, which had resulted in a downgradient plume migrating beneath and off the Site. [Seyfarth, Trial Tr. 112:21-113:7, 203:20-204:24 Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 67 at KR003115, KR003120].
59. In January 1990, Donnelly Engineering identified the overflow pool connected to the main leaching pool and notified SCDHS that this pool existed. [Seyfarth, Trial Tr. 224:17-225:11, Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 21 at S020524]. An SCDHS inspector who visited the Site noted that the pool had a strong odor of PCE. [*Id.*] Testing showed that soil at the bottom of this overflow pool contained PCE in concentrations of approximately 50,000 ppb. [Seyfarth, Trial Tr. 225:12-226:10, Dec. 2, 2013, Rec. Doc. 346; Pl.’s Ex. 21 at S020528].
60. In 1990, Donnelly Engineering installed a soil vapor extraction (“SVE”) system referred to as “Cyclo-Purge” to remediate the area around the north leaching pool by drawing contamination vapors out of the soil zone and processing them; this system removed more than 2,000 pounds, or one ton, of PCE from the soil by the mid-1990s. [Dyber, Trial Tr. 404:24-405:12, Dec. 3, 2013, Rec. Doc. 346; Dyber, Trial Tr. 584:6-13, Dec. 4, 2013, Rec. Doc. 345; McLane, Trial Tr. 794:13-795:3, Dec. 5, 2013, Rec. Doc. 343; McLane, Trial Tr. 856:7-21, Dec. 9, 2013, Rec. Doc. 336].

61. In May 1993, Donnelly Engineering found concentrations of 15,000 ppb of PCE in the groundwater near the south-southeastern corner of the Site at MW2A; this concentration is 3,000 times greater than the groundwater standard. [Dyber, Trial Tr. 403:10-404:18, Dec. 3, 2013, Rec. Doc. 344].

g. New York State's Investigation

62. In April 1993, DEC listed the Site as a Class 2 New York State Inactive Hazardous Waste Disposal Site, indicating that hazardous substances such as PCE and TCE, among others, posed a threat to human health and the environment. [Dyber, Trial Tr. 382:6-19, 385:9-15, Dec. 3, 2013, Rec. Doc. 344; Pl.'s Ex. 44 at S008442].

63. DEC found that groundwater contamination from the Site posed a threat to the AAWF. [Dyber, Trial Tr. 385:9-386:2, Dec. 3, 2013, Rec. Doc. 344; Pl.'s Ex. 44 at S008442, S008446].

64. DEC undertook a Remedial Investigation and Feasibility Study ("RI/FS") to define the nature and extent of the contamination at the Site and evaluate remedial options to clean up the Site. [Dyber, Trial Tr. 391:21-392:11, 393:18-395:3, Dec. 3, 2013, Rec. Doc. 344; Pl.'s Ex. 46; *see also* Pl.'s Ex. 48].

65. The RI/FS for the Site was issued in February 1999 by DEC contractor Lawler, Matusky & Skelly Engineers, LLP and their subcontractor, H2M Group. [Dyber, Trial Tr. 393:11-17, 394:22-395:5, Dec. 3, 2013, Rec. Doc. 344; Pl.'s Ex. 48].

66. The RI/FS contractors tested five groundwater samples collected at the Site and found that all contained concentrations of PCE that exceeded the state groundwater standard of 5 ppb PCE; more than half of the samples also contained TCE and DCE concentrations

- that exceeded state groundwater standards. [Dyber, Trial Tr. 401:19-402:9, 423:2-425:15, Dec. 3, 2013, Rec. Doc. 344; Pl.'s Ex. 48 at S013067].
67. The RI/FS found the groundwater downgradient of the Site contaminated with PCE, TCE, and DCE: the same compounds found in groundwater at the Site. [Dyber, Trial Tr. 429:20-431:2, Dec. 3, 2013, Rec. Doc. 344; Pl.'s Ex. 48 at S013154, S013188, S013189, S013191].
68. The RI/FS stated that the high VOC concentrations, including PCE, TCE, and DCE concentrations, in the Site's soil "may indicate the presence of dense non-aqueous-phase liquids (DNAPLs)". [Pl.'s Ex. 48 at S013060; *see also* Dyber, Trial Tr. 416:10-418:3, Dec. 3, 2013, Rec. Doc. 344]. DNAPLs provide an ongoing source of groundwater contamination due to the fact that they are denser than water and have low solubility in water, which allows them to sink through the groundwater and remain subsurface, slowly solubilizing over time. [McLane, Trial Tr. 890:22-893:6, Dec. 9, 2013, Rec. Doc. 336].
69. Plaintiff's expert, McLane, concluded that DNAPLs were likely present in the soil and groundwater at numerous locations at the Site and that the Site's DNAPLs contributed to downgradient contamination. [McLane, Trial Tr. 893:9-895:14, 896:19-900:18, Dec. 9, 2013, Rec. Doc. 336].
70. The RI/FS analyzed groundwater samples collected from monitoring wells MW-8, GP-E, and GP-W, located upgradient and off-Site, and found that the VOC levels contained in the samples were at or below state groundwater standards. Based on these findings, DEC concluded that there was not an upgradient source of contamination of the Site. [Dyber, Trial Tr. 522:23-523:13, 523:25-524:13, 525:14-21, 529:9-530:3, 531:9-20, Dec. 4, 2013, Rec. Doc. 345; Pl.'s Ex. 48 at S013144, S013150, S13052, S013192, S13197].

71. The RI/FS noted that the SCWA closed three drinking water wells near the AAWF at a depth of approximately 85 feet bgs in the late 1970s when the presence of TCE (with highest readings of 8,000 ppb) and PCE (with highest readings of 120 ppb), among other chemicals, was found. The RI/FS also noted that DEC had not attributed this contamination to operations at the Site.¹² [Pl.'s Ex. 15 at S013727].
72. Neither Dyber nor defendants' expert Sosik had knowledge of whether the TCE and PCE contamination found in the three drinking water wells near the AAWF was remediated or investigated. [Dyber, Trial Tr. 680:13-25, 695:17-25, Dec. 5, 2013, Rec. Doc. 343; Sosik, Trial Tr. 1213:8-13, Dec. 11, 2013, Rec. Doc. 338].
73. The RI/FS estimated that it would take between 13 and 14 years for groundwater to travel from the Site to the area of the AAWF, approximately 6,500 feet away. [Dyber, Trial Tr. 712:25-713:17, Dec. 5, 2013, Rec. Doc. 343; Pl.'s Ex. 48 at S013202].

h. The Groundwater Contamination Plume

74. Four major areas of contamination at the Site ("plume source areas") contributed to the creation of a downgradient PCE groundwater plume: (1) liquids and sludges contained in the leaching pool; (2) contaminated soils surrounding the leaching pool; (3) contaminated soils beneath the building slab; and (4) contamination in the aquifer. [McLane, Trial Tr. 804:4-806:25, Dec. 5, 2013, Rec. Doc. 343].
75. There is nothing in the sand and gravel aquifer at or downgradient of the Site to prevent contaminants from moving downgradient to threaten the AAWF. [McLane, Trial Tr. 936:4-15, Dec. 9, 2013, Rec. Doc. 336; *see also* Sosik, Trial Tr. 1324:21-1326:12, Dec. 11, 2013, Rec. Doc. 338].

¹² Plaintiff is not seeking costs associated with these wells. [See Rec. Doc. 342 at 31].

76. High concentrations of PCE that greatly exceeded the state groundwater standard were found on-Site. Somewhat lower, but still higher than permissible concentrations of PCE were consistently found downgradient of the Site. [Dyber, Trial Tr. 401:19-404:18, 424:20-425:15, 430:4-436:12, Dec. 3, 2013, Rec. Doc. 344; Dyber, Trial Tr. 480:10-18, 488:9-20, 489:6-23, 494:4-16, Dec. 4, 2013, Rec. Doc. 345; Pl.'s Ex. 48 at S013186, S013188, S013189; Pl.'s Ex. 48A at S013154].
77. The PCE groundwater plume has migrated from the Site in a south-southeast direction toward the AAWF. Based on groundwater sampling data, the PCE plume was within a half-block of the AAWF in 2007. The PCE plume is reasonably considered a threat to the drinking water supply obtained from those wells, although no PCE has yet been detected in the AAWF. [Dyber, Trial Tr. 454:3-12, 472:12-473:9, 473:20-475:17, Dec. 4, 2013, Rec. Doc. 345; McLane, Trial Tr. 865:3-870:14, 879:3-13, 909:15-25, 913:14-914:2, 934:18-935:6, Dec. 9, 2013, Rec. Doc. 336; Pl.'s Ex. 48 at S013086; Pl.'s Ex. 80 at S031739; Pl.'s Ex. 83; Pl.'s Ex. 84].
78. To confirm his opinion that a PCE plume existed downgradient from the Site and extended to near the AAWF, McLane utilized a software program to construct a fate transport model that included such factors as the location of the source, the size and geometry of that source, the concentration of PCE at the source, the dispersion coefficients for the chemical, and information on the aquifer, including its thickness, its hydraulic conductivity, how easily water flows through it, its hydraulic gradient, and how the water levels drop away from the source area that moves the plume outward. [McLane, 905:1-906:19, Dec. 9, 2013, Rec. Doc. 336].

79. Contamination from the Fairchild Republic main plant, an Inactive Hazardous Waste Disposal Site identified by DEC and located approximately 7,000 feet north of the Site, was not a primary cause of the PCE contamination found downgradient from the Site because the contamination related to the Site is primarily located in the Upper Glacial Aquifer, which is nearer to the surface, whereas the contamination from the Fairchild Republic Site is primarily located deep beneath the surface in the Magothy Aquifer. [McLane, Trial Tr. 922:5-934:17, Dec. 9, 2013, Rec. Doc. 336; *see also* Pl.’s Ex. 74 at S009893].
80. The presence of other theoretical sources of groundwater contamination does not disprove the existence of the predominantly-PCE plume emanating from the Site in a south-southeast direction. [McLane, Trial Tr. 1434:23-1436:1, Dec. 11, 2013, Rec. Doc. 338].
81. Defendants’ expert, Sosik, offered no explanation for, and had no opinion about, the source of the VOC contamination found in the area immediately south-southeast of the Site. [Sosik, Trial Tr. 1326:13-1328:5, 1328:9-11, Dec. 11, 2013, Rec. Doc. 338; Defs.’ Ex. 126 at ADAM009030].¹³
82. McLane analyzed and constructed a model for the PCE migration from the Site to the AAWF, but did not perform the same type of analysis for the homes and businesses thousands of feet south and southeast of the AAWF that were connected to the public well supply in 1998. [Pl.’s Ex. 83; Pl.’s Ex. 84].

¹³ Further, Sosik stated that “[t]here is nothing that shows a contaminant plume emanating from the National Heatset site and extending down to the AAWF” [Sosik, Trial Tr. 1267:12-14, Dec. 11, 2013, Rec. Doc. 338] and acknowledged that “it is impossible to determine to what degree or extent off-[S]ite contamination [is] related to the Heatset site.” [Sosik, Trial Tr. 1365:2-6, Dec. 11, 2013, Rec. Doc. 338].

83. Some of the private wells located between 2,000 and 3,000 feet from the AAWF, or approximately 8,500 to 9,500 feet from the Site, tested positive for PCE contamination in November 1998. [Dyber, Trial Tr. 438:9-439:19, Dec. 3, 2013, Rec. Doc. 344; Dyber, Trial Tr. 570:1-571:11, Dec. 4, 2013, Rec. Doc. 345; Pl.’s Ex. 40 at 021682 (showing that 411 Atlantic Street¹⁴ had a PCE concentration of 93 ppb, 12 Edmunds Place¹⁵ had a PCE concentration of 2.7 ppb, and the three business at 3296 Great Neck Road had a PCE concentration of 10 ppb); Pl.’s Ex. 40].
84. Groundwater would take 14 to 15 years to flow approximately 7,000 feet under McLane’s software model, which is consistent with the estimates provided by the RI/FS. [McLane, Trial Tr. 910:9-16, Dec. 9, 2013, Rec. Doc. 336].
85. Even if NHP began releasing contaminated waste in 1983, their first year of operation, and it takes 14 to 15 years for PCE to travel approximately 7,000 feet through the groundwater, it is not possible that the contamination existing in the private wells between 8,500 and 9,500 feet from the Site in 1998 is related to a release at the Site, as the contamination would have only traveled approximately 7,000 feet in that time. [Findings of Fact ¶¶ 15, 17, 26-28, 73, 84].

i. New York State’s Remedial Actions

86. DEC issued a Proposed Remedial Action Plan for the Site in February 1999. [Dyber, Trial Tr. 532:1-24, Dec. 4, 2013, Rec. Doc. 345; Pl.’s Ex. 51].

¹⁴ The Court notes that the parties frequently refer to “411 Atlantic Avenue,” rather than “411 Atlantic Street,” as it is found in plaintiff’s exhibit 40. The Court believes this to be simply a mistake, as there is no 411 Atlantic Avenue in Copiague, NY, only a 411 Atlantic Street. See GOOGLE MAPS, <https://maps.google.com/>, (last visited April 10, 2014).

¹⁵ The Court notes that the spelling of “Edmunds” in the cited exhibit is “Edmonds.” The Court believes this to be simply a spelling error in the exhibit, as there is no separate “12 Edmonds Place” in Copiague, NY. See GOOGLE MAPS, <https://maps.google.com/>, (last visited April 10, 2014).

87. In June 1999, DEC issued its final remedial action plan, or Record of Decision (“ROD”), for the Site. [Dyber, Trial Tr. 534:8-16, Dec. 4, 2013, Rec. Doc. 345; Pl.’s Ex. 15].
88. DEC implemented four remedies, three of which were located on-Site: (1) an in-situ chemical oxidation system, (2) a soil vapor extraction (“SVE”) system, and (3) an in-well vapor stripping system. [Dyber, Trial Tr. 539:11-20, Dec. 4, 2013, Rec. Doc. 345].
89. The fourth remedy, another in-well vapor stripping system, was installed off-Site, near the AAWF. [Dyber, Trial Tr. 539:11-20, 540:1-18, Dec. 4, 2013, Rec. Doc. 344].
90. The on-Site in-situ chemical oxidation system operates by pumping potassium and sodium permanganate into the groundwater to react with, and therefore ameliorate, the toxicity of contaminants such as PCE. [Dyber, Trial Tr. 540:22-541:13, Dec. 4, 2013, Rec. Doc. 345]. This system operated from 2005 until the groundwater under the leaching pool area was remediated, at which point it was closed. [Dyber, Trial Tr. 542:3-16, Dec. 4, 2013, Rec. Doc. 345].
91. The SVE system addresses the sub-slab soil contamination, which was discovered around 2000 or 2001, after the ROD was issued. [Dyber, Trial Tr. 543:23-544:4, Dec. 4, 2013, Rec. Doc. 345]. The SVE system remediates contaminated soil by removing the vapors from the ground and volatilizing¹⁶ the VOC contamination. [Dyber, Trial Tr. 542:17-543:22, Dec. 4, 2013, Rec. Doc. 345]. Since beginning operation in 2002, the SVE system has removed over 2,600 pounds of PCE from the soil, an amount that is in addition to the PCE removed by the on-Site SVE system installed by Donnelly Engineering. [Dyber, Trial Tr. 544:12-13, 546:17-547:4, Dec. 4, 2013, Rec. Doc. 345; McLane, Trial Tr. 808:5-14, Dec. 5, 2013, Rec. Doc. 343; *Findings of Fact* ¶ 60].

¹⁶ To volatilize means to cause to pass off in vapor. MERRIAM-WEBSTER ONLINE DICTIONARY, <http://www.merriam-webster.com/dictionary/volatilize>, (last visited April 10, 2014).

92. In-well vapor stripping involves using an underground air stripper in a treatment well to remediate contaminated groundwater by aerating the groundwater that enters the treatment well, which removes the contaminants from the groundwater and transfers them to the air. [Dyber, Trial Tr. 548:14-549:21, Dec. 4, 2013, Rec. Doc. 345].
93. DEC has operated the on-Site in-well vapor stripping system since 2010. [Dyber, Trial Tr. 550:2-19, Dec. 4, 2013, Rec. Doc. 345].
94. Since 2012, DEC has also operated an off-Site in-well stripping system on the AAWF property to remediate Site-related downgradient groundwater contamination that exists up to 80 feet bgs. [Dyber, Trial Tr. 540:15-18, 550:20-552:23, Dec. 4, 2013, Rec. Doc. 345].
95. In addition to the four remedies that DEC undertook, DEC reimbursed SCWA for the costs associated with connecting six homes and three businesses, including those located at 411 Atlantic Street, 12 Edmunds Place, and 7 Howard Street, to public water supplies in November 1998 to provide potable water to those residents and businesses. [Dyber, Trial Tr. 438:9-439:21, Dec. 3, 2013, Rec. Doc. 344].

j. New York State's Response Costs

96. The parties stipulated to the response costs incurred by DEC and the New York State Department of Health ("DOH") in responding to the release of hazardous waste from the Site. [See Rec. Doc. 325].¹⁷
97. The total amount of costs incurred by DEC for its employees and their salaries ("personal costs") through February 13, 2013, is \$455,934.61. [Pl.'s Ex. 54 at S039343]

¹⁷ On December 6, 2013, the parties stipulated to the past total costs related to the cleanup of the Site and area downgradient of the Site, as incurred by the DEC and the DOH. [Rec. Doc. 325]. At trial, the parties entered into evidence an allocation of costs between the Site and the downgradient areas, as set out in plaintiff's exhibits 87 and 88. [Trial Tr. 1455: 6-17, Dec. 11, 2013, Rec. Doc. 338].

- (\$413,822.44); Pl.’s Ex. 55 at S039336 (\$12,279.36); Pl.’s Ex. 56 at S039580 (\$24,304.16); Pl.’s Ex. 57 at S039330 (\$5,528.65); Rec. Doc. 325 ¶ 6].
98. The total amount of costs incurred by DEC for its contractors through April 7, 2013, is \$6,031,481.81. [Pl.’s Ex. 54 at S039343 (\$4,203,958.65); Pl.’s Ex. 55 at S039336 (\$76,008.52); Pl.’s Ex. 56 at S039580 (\$1,461,969.74); Pl.’s Ex. 57 at S039330 (\$289,544.90); Rec. Doc. 325 ¶ 7].
99. The total amount of costs incurred by DOH through March 27, 2013, is \$20,566.82. [Pl.’s Ex. 54 at S039343 (\$17,200.50); Pl.’s Ex. 55 at S039336 (\$31.72); Pl.’s Ex. 56 at S039580 (\$331.44); Pl.’s Ex. 57 at S039330 (\$3,003.16); Rec. Doc. 325 ¶ 8].
100. The total amount of costs incurred by DEC and DOH in responding to the release of hazardous wastes through the aforementioned dates is \$6,507,983.24. [*Findings of Fact* ¶¶ 97-99; Rec. Doc. 325 ¶ 9].
101. Plaintiff settled its claims against defendant Rudolph Marconi for \$10,000. [Pl.’s Ex. 56 at S039580; Rec. Doc. 325 ¶ 10].
102. Therefore, the total amount of unreimbursed costs sought by plaintiff and incurred by DEC and DOH in responding to hazardous wastes at the Site, downgradient from the Site, and between 2,000 and 3,000 feet from the AAWF, is \$6,497,983.24. [Rec. Doc. 325 ¶ 11].
103. In 2004, the New York State Department of Law (“DOL”) retained Charles McLane III, Ph.D., of McLane Environmental, L.L.C., to provide expert services in this case. The total amount of costs incurred for McLane Environmental’s work on this matter between

December 2004 and March 2013 is \$228,642.40.¹⁸ [Pl.’s Ex. 58; Rec. Doc. 325 ¶¶ 12-13].

104. In 2005, the DOL retained John Ianonne, P.E., of Day Environmental, Inc., to provide expert services in this case. The total amount of costs incurred for Day Environmental’s work between April 29, 2005, and June 7, 2010, is \$28,809.62. [Pl.’s Ex. 59 at S039792; Rec. Doc. 325 ¶¶ 14-15].
105. The total amount of costs sought by plaintiff and incurred by DEC, DOH, and the DOL is \$6,755,435.26. [*Findings of Fact* ¶¶ 102-104].
106. The cost of connecting the wells of the six homes and three businesses located south and southeast of the AAWF, including 411 Atlantic Street, 12 Edmunds Place, and 3296 Great Neck Road, to public water in 1998 is \$24,339.09.¹⁹ [Pl.’s Ex. 87 at S040099; Rec. Doc. 342 at 43].

VI. Conclusions of Law

a. Background

1. “Congress enacted CERCLA in response ‘to the serious environmental and health risks posed by industrial pollution.’” *United States v. E.I. du Pont de Nemours & Co., Inc.*, 341 F. Supp. 2d 215, 231 (W.D.N.Y. 2004) (quoting *United States v. Bestfoods*, 524 U.S. 51, 55 (1998)).

¹⁸ Despite the parties’ stipulation as to McLane Environmental’s costs [Rec. Doc. 325], OAB defendants expressed an objection to paying the costs incurred by McLane’s assistants because the plaintiff’s contract, they argue, is with McLane in his individual capacity and not McLane Environmental LLC. [See Rec. Doc. 341 at 13]. However, OAB defendants provide no citation to support this assertion and the exhibit cited in the joint stipulation contains bills with the heading “McLane Environmental LLC.” Further, OAB defendants do not propose an alternate amount for the Court’s consideration.

¹⁹ Plaintiff is no longer seeking to recover the costs of connecting the Miller Avenue homes to the public water system. [Dyber, Trial Tr. 570:19-572:19, Dec. 4, 2013, Rec. Doc. 345; Plaintiff’s counsel, Andrew Frank, Trial Tr. 576:4-577:2, Dec. 4, 2013, Rec. Doc. 345].

2. CERCLA § 107(a) provides that a party responsible for the release of hazardous substances is liable for “all costs of removal or remedial action” incurred by a State that are “not inconsistent with the national contingency plan.” 42 U.S.C. § 9607(a).
3. In the Second Circuit, in order to establish a prima facie claim for CERCLA liability, plaintiff must establish that: “(1) the defendant is a responsible party as defined by section 9607(a)(1)-(4); (2) that the site at issue is a ‘facility’ as defined by section 9601(9); (3) that there has been a release of hazardous substances at the facility or that such a release is threatened; (4) that the plaintiff has incurred response costs in connection with that release; and that (5) the costs incurred and the response actions taken conform to the National Contingency Plan set up under CERCLA.” *Gen. Elec. Co. v. AAMCO Transmissions, Inc.*, 962 F.2d 281, 285 (2d Cir. 1992) (citing *B.F. Goodrich Co. v. Murtha*, 958 F.2d 1192, 1198 (2d Cir. 1992)).
4. A plaintiff’s burden in a CERCLA case does not require scientific certainty. *See, e.g., B.F. Goodrich v. Betkoski*, 99 F.3d 505, 526 (2d Cir. 1996) (holding that “a CERCLA plaintiff is not required to prove its case with scientific certainty” and observing that certainty “is not always a realistic goal in environmental science, where certainty can be elusive”).
5. The trial in this case was conducted to determine whether, and to what extent, defendants are liable for the costs associated with the remediation of hazardous materials detected downgradient from the Site and to determine the total costs for which defendants are liable. *See Findings of Fact* ¶ 8. CERCLA cases concerning two areas of potential contamination, a primary Site and a secondary downgradient plume, are often referred to as “two-site” cases.

6. While the Second Circuit has not ruled on which causation standard applies to two-site cases, other courts addressing this issue have supported a causation standard higher than the strict liability analysis applicable to primary Site cases.^{20,21} Some courts have concluded that, in two-site cases, “there must be sufficient evidence from which a jury might reasonably find that it is ‘more probable than not’ that the defendant’s wastes *did* migrate to the site where the plaintiff incurred response costs, not merely that there was some ‘possibility’ that they reached the site.” *Solutia, Inc. v. McWane, Inc.*, No. 1:03-cv-1345-PWG, 2012 WL 2031350, at *8 (N.D. Ala. June 1, 2012) (emphasis added) (*citing Kalamazoo River Study Group v. Rockwell Intern. Corp.*, 171 F.3d 1065, 1072-73 (6th Cir. 1999)).
7. The Court concurs with Judge Townes March 30, 2011, ruling in this proceeding that plaintiff is not required to “fingerprint” the Site’s downgradient contamination in order to show that defendants are liable:

The Court is mindful that “[f]rom a technological standpoint, [the plaintiff’s] ability to ‘fingerprint’ the [contaminant] in the groundwater as emanating from either [the defendant[s]’ land] or [another source of contamination] is exceedingly doubtful” and that “[t]o impose such a requirement might permit the owners and operators of both facilities to

²⁰ Defendants’ counsel represented to the Court at trial that defendants’ burden of persuasion was “to show that the downgradient contamination [which caused] the damages incurred by the state, were not the responsibility of the One Adams Boulevard defendants.” [Robinson, Trial Tr. 83:12-84:1, Dec. 2, 2013, Rec. Doc. 346]. Conversely, in their briefs, defendants’ counsel argues that plaintiff’s burden of proof was to show “by a preponderance of the evidence that discharges of Perc or PCE at the Site are an actual threat to the active Albany Avenue public water supply wells.” [Rec. Doc. 335 at 18].

²¹ See, e.g., *Westfarm Assocs. Ltd. P’ship v. Wash. Suburban Sanitary Comm’n*, 66 F.3d 669, 681 (4th Cir. 1995) (“The plaintiff must prove only that contaminants that were once in the custody of the defendant *could have* travelled onto the plaintiff’s land. The plaintiff need not produce any evidence that the contaminants *did* flow onto its land from the defendant’s land. Rather, once plaintiff has proven a *prima facie* case, the burden of proof falls on the defendant to disprove causation.” (citations omitted) (emphasis added)); *White v. Cnty. of Newberry*, 985 F.2d 168, 174-75 (4th Cir. 1993) (requiring plaintiffs to prove “a release or threatened release of a hazardous substance from the County’s maintenance facility that caused the [plaintiffs] to incur response costs consistent with the national contingency plan”); *Amoco Oil Co. v. Borden, Inc.*, 889 F.2d 664, 670 (5th Cir. 1989) (“[T]he question of whether a release has caused the incurrence of response costs should rest upon a factual inquiry into the circumstances of a case and the relevant factual inquiry should focus on whether the particular hazard justified any response actions; *Innis Arden Golf Club v. Pitney Bowes, Inc.*, 629 F. Supp.2d 175, 185-87 (D. Conn. 2009) (discussing various causation standards).

avoid financial responsibility for the cleanup, and thus would eviscerate section 107.

[Rec. Doc. 222 at 36] (quoting *Artesian Water Co. v. Gov't of New Castle Cnty.*, 659 F. Supp. 1269, 1283 (3rd Cir. 1987) (aff'd 851 F.2d 643 (3rd Cir. 1988)); *see also United States v. Wade*, 577 F.Supp. 1326, 1332-33 (E.D. Pa. 1983) (concluding that section 107 plaintiff need not prove that wastes released from a site are those of a particular generator defendant).

8. The Court adopts the two-site causation standard espoused by the Third Circuit in *Artesian*: “if the release or threatened release of contaminants from the Site was a substantial factor in causing [plaintiff] to incur costs, the [defendants] may not escape liability merely because other causes . . . have contributed to the result.” *Artesian*, 659 F. Supp. at 1283.
9. In order to succeed on its downgradient damages claim under CERCLA § 107, plaintiff must show that the release at the Site was a substantial factor in incurring downgradient response costs. *See, e.g., Artesian*, 659 F. Supp. at 1282 (“CERCLA’s strict liability scheme does not diminish the necessity of demonstrating a causal connection between a release or threatened release and the incurrence of costs.”).

b. Plaintiff’s Failure to Specifically Plead Damages for the Downgradient Area Does Not Preclude Plaintiff from Collecting Downgradient Damages

10. In their Post-Trial Memorandum of Law, OAB defendants argue that plaintiff should not be permitted to collect damages for “any area other than at the Site” because plaintiff did not specifically request damages associated with the off-Site downgradient area in its Amended Complaint.²² [Rec. Doc. 334 at 7]. In support of their argument, defendants

²² The Court notes that defendants, in making this argument, fail to cite any case law. *See* [Rec. Doc. 334 at 8-10].

note that the Amended Complaint asks for relief consisting only of “all past and future response costs at the Site.” [Rec. Doc. 334 at 5; *see also* Rec. Doc. 81 at 14].

11. Under Federal Rule of Civil Procedure 15(b)(2), “[w]hen an issue not raised by the pleadings is tried by the parties’ express or implied consent, it must be treated in all respects as if raised in the pleadings.” In the Second Circuit, Federal Rule of Civil Procedure 15(b)(2) is “‘mandatory, not merely permissive’ in requiring that issues that are tried, though not raised in the pleadings, be treated as if they were raised in the pleadings.” *Ostano Commerzanstalt v. Telewide Sys., Inc.*, 880 F.2d 642, 646 (2d Cir. 1989) (quoting *SEC v. Rapp*, 304 F.2d 786, 790 (2d Cir. 1962)).
12. Assuming *arguendo* that defendants are correct that the damages relating to the downgradient area were not pled with sufficient specificity, the Court finds that defendants consented to the issue of downgradient damages by not objecting either before or during trial when they were aware that issue was to be – or was being – tried.²³ Indeed, the *primary* issue that the trial sought to resolve, as set out by the Court’s March 20, 2013 ruling [Rec. Doc. 272], was whether or not defendants were responsible for the damages to the area downgradient from the Site. [Rec. Doc. 272 at 13]. Under Federal Rule of Civil Procedure 15(b)(2) and Second Circuit jurisprudence, defendants have waived any objections relating to whether or not such damages were properly pled in the Amended Complaint.

c. OAB Defendants Are Responsible for the State’s Costs in Responding to Off-Site Downgradient Contamination

²³ By way of example, in their brief filed on August 3, 2010, defendants acknowledge that plaintiff was seeking “costs associated with the investigation and remediation of hazardous substances that were either detected or thought to be present thousands of feet downgradient of the Site.” [Rec. Doc. 217-19 at 15].

13. Plaintiff has demonstrated that there was a release of PCE and other hazardous substances at the Site. *See* [Rec. Doc. 222 at 16]; *Findings of Fact* ¶¶ 11-15, 18-20, 28-61, 66.
14. Plaintiff has presented sufficient evidence to establish that PCE released at the Site was a substantial factor that caused response costs to be incurred for remediation downgradient from the Site, around the AAWF. *Findings of Fact* ¶¶ 42, 43, 45-51, 53-70, 74-81, 86-94, 96. While the Court has concluded that plaintiff met the *Artesian* standard, the Court also concludes that plaintiff's evidence was sufficient to meet the higher standard set by *Solutia* that at least some PCE contamination from the Site, more likely than not, *did* migrate downgradient to within a block of the AAWF. *Id.*
15. Plaintiff has: (1) eliminated potential alternate contamination sources upgradient from the Site, *Findings of Fact* ¶¶ 50, 70, 79; (2) showed that the south-southeast migration path of PCE and other hazardous chemicals has migrated to within a block of the AAWF, *Findings of Fact* ¶¶ 15, 67, 75, 76, 77; (3) confirmed a downgradient plume with multiple sources, *Findings of Fact* ¶¶ 58, 63, 69, 78; and (4) determined that the Fairfield Republic Site was not a potential cause of the downgradient PCE plume at 80 bgs above the AAWF, *Findings of Facts* ¶¶ 79. This evidence not only *exceeds* the requirements of the *Artesian* causation standard upon which the Court relies, it also meets and exceeds the higher standard required by *Solutia*.
16. Defendants have not proffered sufficient credible evidence to rebut or disprove plaintiff's tracking of PCE and other hazardous substances downgradient from the Site to the area near the AAWF. While defendants point out that previous contamination led to the closure of several private wells at approximately 85 bgs near the AAWF occurring in the

1970s, *Findings of Fact* ¶¶ 71, 72, this does not negate plaintiff's compelling evidence that the source of the *current* downgradient contamination is from the Site.

17. Plaintiff has not provided sufficient evidence for its claim that the houses and businesses located between 2,000 and 3,000 feet further south or southeast of the AAWF are related to the Site's contamination plume. *See Findings of Fact* ¶¶ 17, 82-85. The Court concludes that the threat of a PCE plume arising from the Site was not a substantial factor in closing these wells in 1998.²⁴

d. NHP Defendants and OAB Defendants Are Liable for the State's Past Response Costs of \$6,731,096.17.

18. CERCLA § 101(25) defines the term "response," "respond," and "remedial action" to "include enforcement activities related thereto." 42 U.S.C. § 9601(25). As a result, the State's response costs include the expert witness fees it incurred while recovering its costs. *See DuPont*, 341 F. Supp. 2d at 230; *B.F. Goodrich v. Betkoski*, 99 F.3d 505, 527-28 (2d Cir. 1996) (overruled on other grounds).
19. OAB defendants have stipulated to the State's response costs. [Rec. Doc. 325].
20. OAB and NHP defendants are jointly and severally liable for plaintiff's response costs through the specified dates, totaling \$6,731,096.17.²⁵ *Findings of Fact* ¶¶ 96-106.

e. NHP Defendants and OAB Defendants Are Liable for the State's Future Response Costs.

21. The procedure for recovering future costs is outlined in 42 U.S.C. § 9613, which provides in relevant part:

²⁴ In plaintiff's response to defendants' post-trial brief, plaintiff states that these homes and businesses were connected to a public water supply "to avoid a *future* threat of contamination, not to address already existing contamination." [Rec. Doc. 342 at 44 (emphasis added)]. However, contamination exceeding safe drinking water standards already existed in several of the wells in 1998 when they were connected to the public water supply. *See Findings of Fact* ¶ 83.

²⁵ The Court has subtracted the cost of connecting the wells between 2,000 and 3,000 south and southeast of the AAWF, or the sum of \$24,339.09, from the parties' stipulated total costs of \$6,755,435.26 to arrive at the amount for which the Court finds defendants are liable to plaintiff.

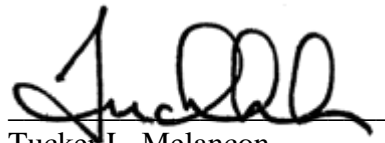
[T]he court shall enter a declaratory judgment on liability for response costs or damages that will be binding on any subsequent action or actions to recover further response costs or damages.

42 U.S.C. § 9613(g)(2).

22. “The entry of declaratory judgment as to liability is mandatory. The fact that future costs are somewhat speculative is no bar to a present declaration of liability.” *New York v. Green*, 420 F.3d 99, 111 (2d Cir. 2005) (citing *Kelley v. E.I. duPont de Nemours & Co.*, 17 F.3d 836, 844 (6th Cir. 1994) (internal quotations omitted)).
23. “Pursuant to § 9613(g)(2), the State may then bring a ‘subsequent action or actions under section 9607 of this title for further response costs at the . . . facility . . . at any time during the response action, but [must commence the action] no later than 3 years after the date of completion of all response action.’” *Green*, 420 F.3d at 111 (2d Cir. 2005).
24. Judge Townes’ March 30, 2011, ruling against OAB defendants [Rec. Doc. 222] and January 31, 2006, default judgments against NHP defendants [Rec. Doc. 141] determined that defendants are liable for future response costs related to the Site.
25. A declaratory judgment for future on-Site costs will be issued by the Court. Defendants are not liable for future acts by other parties that result in the contamination of the area downgradient from the Site for which the Site’s plume is not a substantial factor causing the contamination at issue. Plaintiff may lodge an action to recover response costs associated with the Site’s migratory PCE and other hazardous substance plume, consistent with this ruling and § 9613(g)(2). Plaintiff must establish with specificity how any future response costs are causally connected to the Site’s release of hazardous wastes.

VII. Conclusion

The Court concludes that defendants are liable for the response costs associated with the downgradient contaminant plume emanating from the Site and currently near the AAWF. The Court further concludes that defendants are not liable for the costs of connecting the homes and businesses located between 2,000 and 3,000 feet south and southeast of the AAWF. The Court will therefore enter judgment in favor of plaintiff and against defendants in the sum of \$6,731,096.17, for the response costs set out above. The Court will also enter a declaratory judgment for future response costs to be incurred by plaintiff at the Site and caused by the Site's downgradient plume.


Tucker L. Melançon
United States District Judge

April 25, 2014
Bridgeport, CT